

LISTING OF CLAIMS

The listing of claims provided below replaces all prior versions, and listings, of claims in the application.

- 5 1. (Currently Amended) A method comprising:
- obtaining image data on a server, the image data defining a complete image having a horizontal extent and a vertical extent when rendered in a display;
- clipping said image data on said server to obtain clipped image data, the clipped image data representing a portion of the complete image when rendered in the display;
- 10 transmitting said clipped image data from a transmitter on said server via a computer network without conversion to a receiver on a client;
- said receiver scaling said clipped image data for display; and
- said receiver displaying said scaled clipped image data,
- wherein clipping said image data includes obtaining by said server a clip-list
- 15 specifying at least one clipping region, the at least one clipping region defining a portion of the complete image having the horizontal extent and the vertical extent, $[[\frac{1}{2}]]$ and
- wherein clipping said image data includes mapping by said server of said at least one clipping region to said image data to determine said clipped image data, wherein the mapping includes determining for each of two diagonally opposed corner locations of
- 20 said at least one clipping region one respective $[[a]]$ nearest pixel in said image data to a
~~corner location of said at least one clipping region.~~

2-3. (Cancelled)

4. (Previously Presented) The method of Claim 1, wherein determining a nearest pixel is based on a Euclidean distance.

5. (Previously Presented) The method of Claim 1, wherein said clipping
5 region is a rectangle.

6. (Previously Presented) The method of Claim 1, wherein said clipped
image data are further compressed, wherein said clipped and compressed image data
comprises one or more subsampled chroma components and one or more differentiated
10 and quantized luma components, and wherein determining said nearest pixel further
comprises:

determining a plurality of pixels that comprise samples from said one or more
subsampled chroma components and values from said one or more differentiated and
quantized luma components; and

15 determining said nearest pixel from said plurality of pixels.

7. (Previously Presented) The method of Claim 1, wherein said at least one
clipping region comprises a plurality of clipping regions, and wherein mapping comprises
mapping said plurality of clipping regions to a plurality of regions of image data.

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8. (Previously Presented) The method of Claim 7, wherein transmitting
comprises individually transmitting said plurality of clipping regions of image data.

9. (Previously Presented) The method of Claim 7, wherein scaling comprises independently scaling up said plurality of regions of image data by said client to fill respective regions of a display.

5 10. (Previously Presented) The method of Claim 9, wherein said independently scaling said plurality of regions of image data comprises applying independent scale factors that reduce scaling along a horizontal axis and increase scaling along a vertical axis.

10 11. (Currently Amended) A computer readable medium including program instructions for processing image data, comprising:

program instructions for directing a server to obtain image data, the image data defining a complete image having a horizontal extent and a vertical extent when rendered in a display;

15 program instructions for directing said server to clip said image data to obtain clipped image data, the clipped image data representing a portion of the complete image when rendered in the display;

program instructions for directing said server to transmit said clipped image data via a computer network without conversion to a receiver on a client;

20 program instructions for directing said receiver to scale said clipped image data for display; and

program instructions for directing said receiver to display said clipped image data,

wherein said program instructions for directing said server to clip said image data includes program instructions for directing said server to obtain a cliplist specifying at

25 least one clipping region, the at least one clipping region defining a portion of the

complete image having the horizontal extent and the vertical extent, and program instructions for directing said server to map said at least one clipping region to said image data to determine said clipped image data and to cause said server to determine for each of two diagonally opposed corner locations of said at least one clipping region one
5 respective [[a]] nearest pixel in said image data ~~to a corner location of said at least one clipping region.~~

12-13. (Cancelled)

10 14. (Previously Presented) The computer readable medium of Claim 11, wherein said program instructions for directing said server to determine a nearest pixel determines a Euclidean distance.

15 15. (Previously Presented) The computer readable medium of Claim 11, wherein said clipping region is a rectangle.

16. (Previously Presented) The computer readable medium of Claim 11, wherein said clipped image data are further compressed, wherein said clipped and compressed image data comprises one or more subsampled chroma components and one
20 or more differentiated and quantized luma components, and wherein said program instructions for directing said server to determine said nearest pixel further comprises:

program instructions for directing said server to determine a plurality of pixels that comprise samples from said one or more subsampled chroma components and values from said one or more differentiated and quantized luma components; and

program instructions for directing said server to determine said nearest pixel from said plurality of pixels.

17. (Previously Presented) The computer readable medium of Claim 11,
5 wherein said at least one clipping region comprises a plurality of clipping regions, and
wherein said program instructions for directing said server to map comprises program
instructions for directing said server to map said plurality of clipping regions to a plurality
of regions of image data.

10 18. (Previously Presented) The computer readable medium of Claim 17,
wherein said program instructions for directing said server to transmit comprises program
instructions for directing said server to individually transmit said plurality of regions of
image data.

15 19. (Previously Presented) The computer readable medium of Claim 17,
wherein said program instructions for directing said receiver to scale comprises program
instructions for directing said receiver to independently scale up said plurality of regions
of image data to fill respective regions of a display.

20 20. (Previously Presented) The computer readable medium of Claim 19,
wherein said program instructions for directing said receiver to independently scale said
plurality of regions of image data comprises program instructions for directing said
receiver to apply independent scale factors that reduce scaling along a horizontal axis and
increase scaling along a vertical axis.

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21. (Currently Amended) An apparatus comprising:

a network;

a thin client;

a server configured to obtain image data and perform a mapping of at least one
5 clipping region to said image data to obtain clipped image data, the server configured to
perform the mapping by determining for each of two diagonally opposed corner locations
of said at least one clipping region one respective [[a]] nearest pixel in said image data to
~~a corner location of said at least one clipping region~~, said server further configured to
transmit said clipped image data over said network; and

10 a receiver on said thin client configured to receive said clipped image data without
conversion over said network, said receiver further configured to scale said clipped image
data for display and display said scaled clipped image data.

22. (Previously Presented) The apparatus of Claim 21, wherein said at least
15 one clipping region is defined within a clip-list accessible to said server.

23. (Cancelled)

24. (Previously Presented) The apparatus of Claim 21, wherein said server is
20 configured to determine said nearest pixel based upon a Euclidean distance.

25. (Previously Presented) The apparatus of Claim 21, wherein said at least
one clipping region is a rectangle.

26. (Previously Presented) The apparatus of Claim 21, wherein said clipped image data are further compressed, wherein said clipped and compressed image data comprises at least one subsampled chroma component and at least one differentiated and quantized luma components, and wherein said server is configured to determine said
5 nearest pixel from a plurality of pixels that comprise samples from said at least one subsampled chroma component and values from said at least one differentiated and quantized luma component.

27. (Previously Presented) The apparatus of Claim 21, wherein said server is
10 configured to map a plurality of clipping regions to a plurality of regions of image data.

28. (Original) The apparatus of Claim 27, wherein said server is configured to individually transmit said plurality of regions of image data to said receiver.

15 29. (Previously Presented) The apparatus of Claim 27, wherein said receiver is configured to independently scale up said plurality of regions of image data to fill respective regions of a display.

30. (Previously Presented) The apparatus of Claim 29, wherein said receiver is
20 configured to apply independent scale factors to said regions of image data and wherein said scale factors reduce scaling along a horizontal axis and increase scaling along a vertical axis.

31-33. (Cancelled).

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34. (Currently Amended) An apparatus comprising:

means on a server for obtaining image data, the image data defining a complete image having a horizontal extent and a vertical extent when rendered in a display;

means on a server for mapping at least one clipping region to the image data to
5 obtain clipped image data, wherein the mapping includes determining for each of two diagonally opposed corner locations of said at least one clipping region one respective
[[a]] nearest pixel in the image data to a corner location of the at least one clipping
region, wherein the clipped image data represents a portion of the complete image when rendered in the display;

10 means for transmitting said clipped image data via a computer network from a transmitter on said server without conversion to a receiver on a thin client, wherein said computer network is a shared, low bandwidth network; ~~and~~

means, at said receiver, for scaling said clipped image data for display; and

means at said receiver for displaying said clipped image data.

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35. (Previously Presented) The method of Claim 1, wherein said client is a thin client computer.

36. (Previously Presented) The method of Claim 1, wherein said computer
20 network is a shared network.

37. (Previously Presented) The method of Claim 36, wherein said shared network is a low bandwidth network.

38. (Previously Presented) The computer readable medium of Claim 11,
wherein said client is a thin client computer.

39. (Previously Presented) The computer readable medium of Claim 11,
5 wherein said computer network is a shared network.

40. (Previously Presented) The computer readable medium of Claim 39,
wherein said shared network is a low bandwidth network.

10 41. (Previously Presented) The apparatus of Claim 21, wherein said network is
a shared, low bandwidth network.

42. (Cancelled)

15 43. (Previously Presented) The apparatus of Claim 34, wherein said computer
network is a digital network.

44. (Previously Presented) The method of Claim 36, wherein said computer
network is a digital network.

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45. (Previously Presented) The computer readable medium of Claim 11,
wherein said computer network is a digital network.

25 46. (Previously Presented) The apparatus of Claim 41, wherein said network is
a digital network.

47. (Previously Presented) The apparatus of Claim 21, wherein said thin client provides a network interface to a user and wherein said server provides a plurality of computational services removed from said thin client to said user.

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48. (Previously Presented) The apparatus of Claim 47, wherein said plurality of computational services comprise a computational power and a state maintenance for said thin client.

10 49. (Cancelled)

50. (Previously Presented) The apparatus of Claim 21, wherein said image data is clipped only at said server and said clipped image data is scaled only at said thin client in order to provide greater image data transmission efficiency from said server to
15 said thin client via said network.

51. (Previously Presented) The apparatus of Claim 21, further comprising a clip-list identifying visible region displayed on the client, wherein said server is configured to obtain a copy of said clip-list and wherein said copy of said clip-list
20 residing on said server is used by said server to obtain said clipped image data from said obtained image data.